THE FACTS

Information About Environmental Cleanup at McClellan AFB.

Produced by McClellan AFB Environmental Management Number 8

Steam Cleanup Study Underway

As McClellan Air Force Base (AFB) moves forward in its cleanup efforts, the Environmental Restoration Division is evaluating innovative technologies to clean up contamination. The base is studying a promising technology for removing contaminants from soil and groundwater. The new method, called steam injection, is similar to a proven process used to heat and remove oil from production fields in California's central valley. Steam injection was developed by Dr. Kent Udell at the University of California at Berkeley. Currently, McClellan has selected a site where a small-scale steam injection system will test the technology.

Laboratory results show that steam injection coupled with vacuum extraction promises to be a less time-consuming and much less costly alternative for removing soil and groundwater contaminants at the base. The process is fairly straightforward. Steam is

Steam Injection/Vapor Extraction for Soil and Groundwater Cleanup

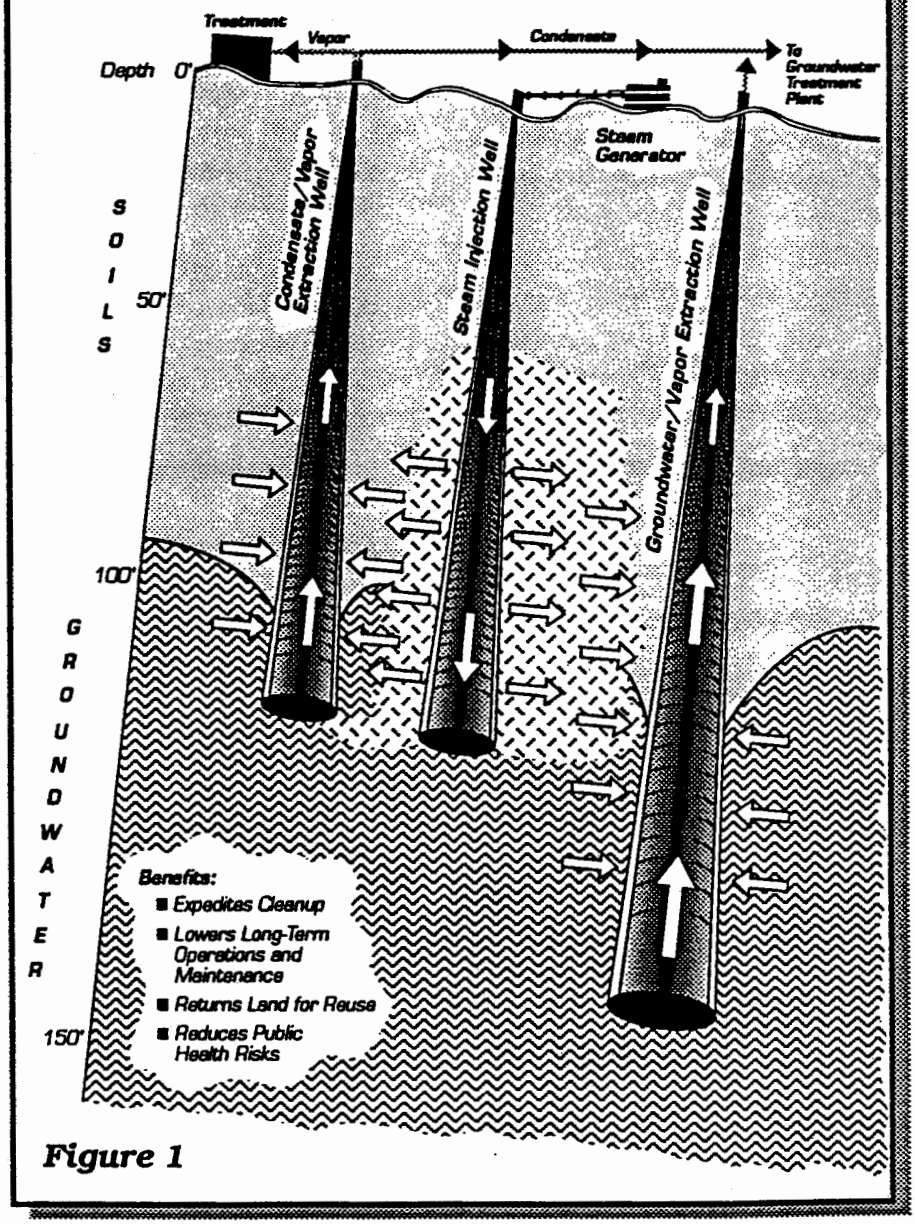

Figure 1

injected into the soil and groundwater. The steam vaporizes the contaminants, which are then extracted from the ground through vapor and condensate wells. The liquid condensate removed will be treated at the base groundwater treatment plant. The vapor will also be contained and treated. Figure 1 illustrates the process.

The base is working with the regulatory agencies, CH2M HILL, and Dr. Udell to implement the steam injection process at a former burn and disposal pit in the west area of the base. The site was selected based on review of available information on the geology and contamination of various sites on the base. This information was gathered primarily from the Administrative Record, a collection of environmental documents housed in the base library. Further information was also provided by base and environmental agency representatives.

Further testing and additional site characterization are next. During this phase, which may take 9 months, the site's geology and contamination will be better defined. Groundwater wells and/or soil borings will be installed. Also, a large number of soil samples will be taken to define the extent of contamination.

Following site characterization, steam injection wells, vacuum extraction wells, and condensate extraction wells will be drilled. Existing groundwater extraction wells will be used whenever possible. The site will contain piping to carry the steam, and other equipment, including a steam generator. Continuous monitoring will be conducted during the steam injection/vacuum extraction process to make sure environmental impacts are minimized and cleanup goals are met.

"While the 1980s were the decade for successful containment, the 1990s will be the decade for cleanup," said Col. Keith Findley, Environmental Management Director. "Steam cleaning soils enables us to attack the contamination at its source rather than waiting until it leaches into the groundwater before we treat it."

For More Information Contact

Community Affairs Coordinators

Linda Trogdon
McClellan AFB
Environmental Management
643-1250

Andrew Bain
U.S. EPA
(415) 744-2184

Sue Sher
DHS
855-7802

Public Representatives

Burl Taylor
County of Sacramento
[redacted]

Bob Wright
AFGE Local 1857
[redacted]

Chuck Yarbrough
City of Sacramento
[redacted] (day)
[redacted] (evening)